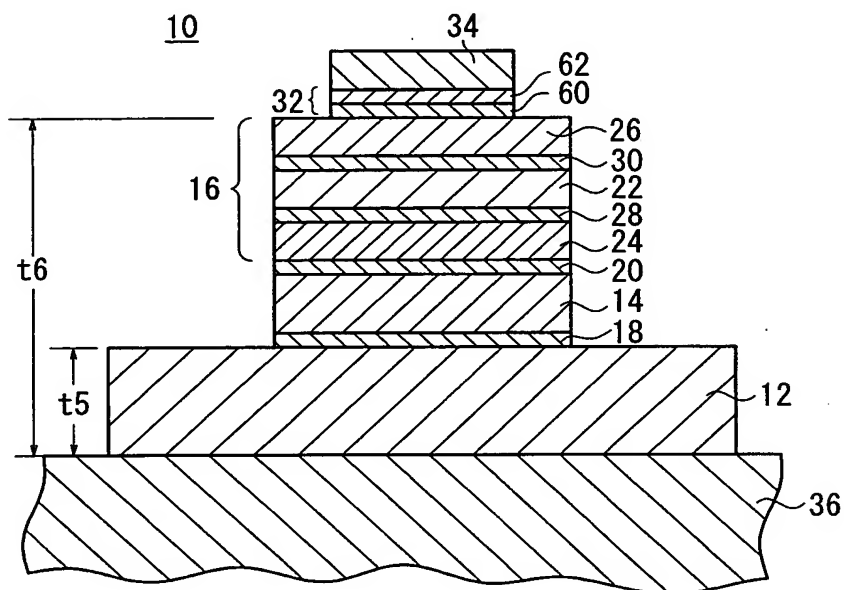


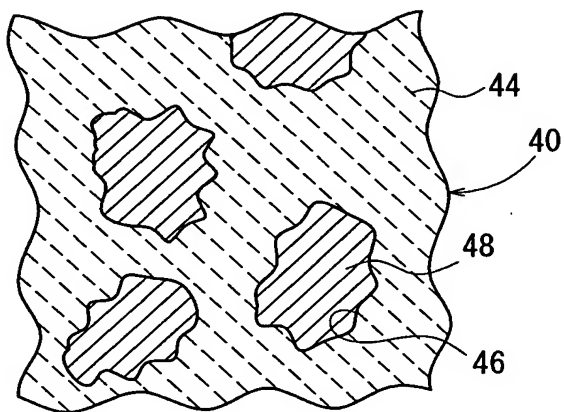
1/17

FIG. 1



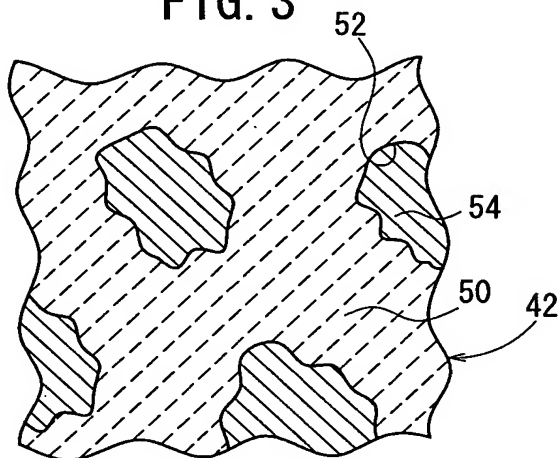
2/17

FIG. 2



3/17

FIG. 3



4/17

FIG. 4A

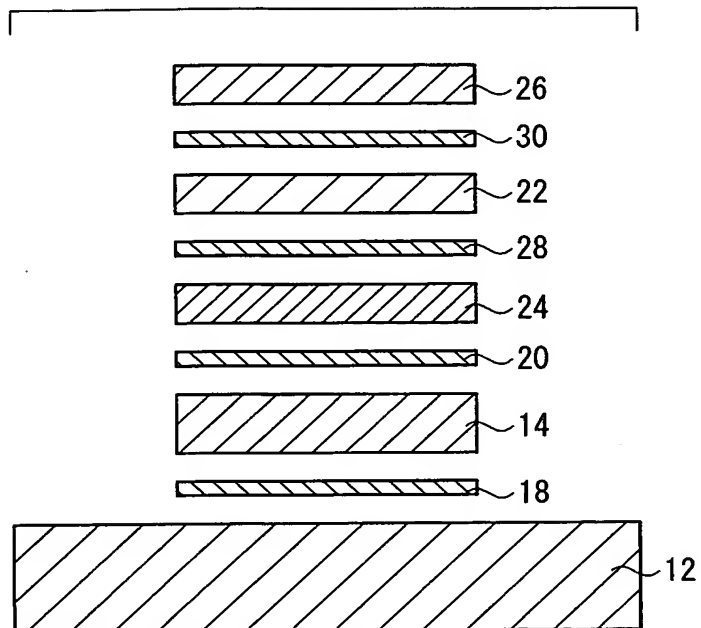
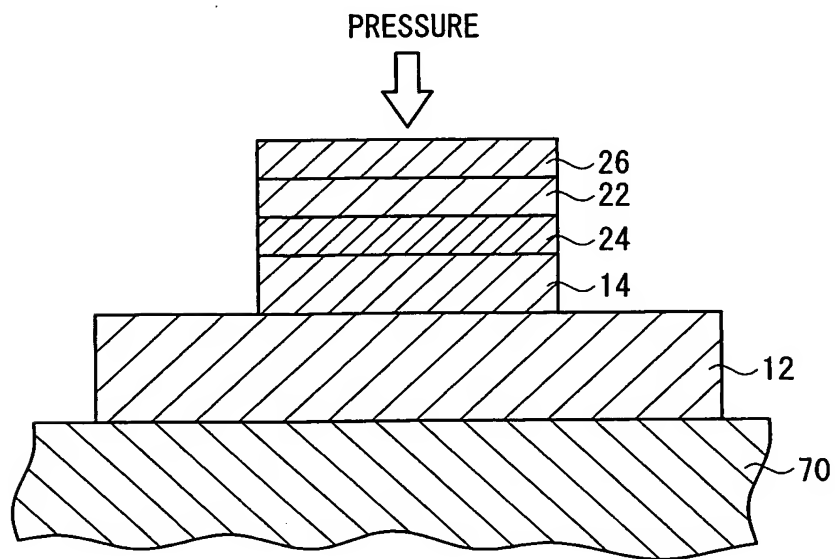
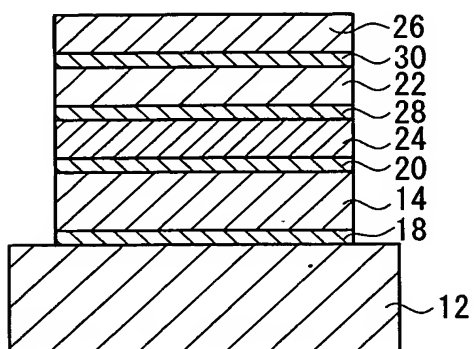


FIG. 4B



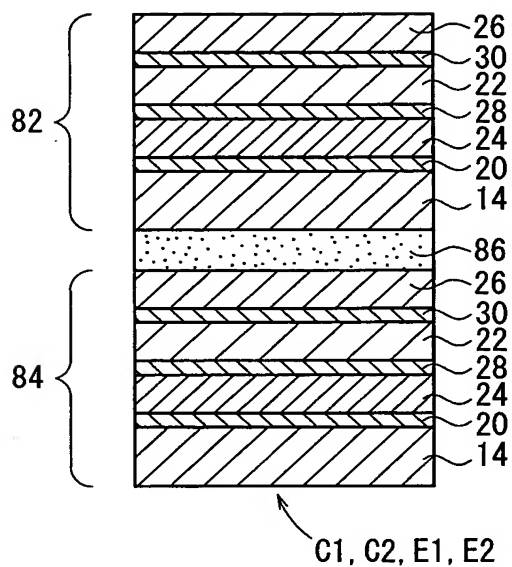
5/17

FIG. 5



6/17

FIG. 6



7/17

FIG. 7A

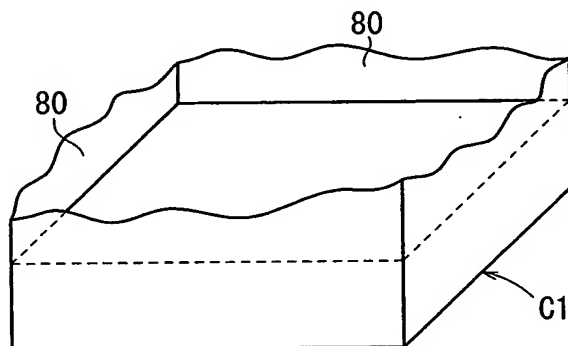
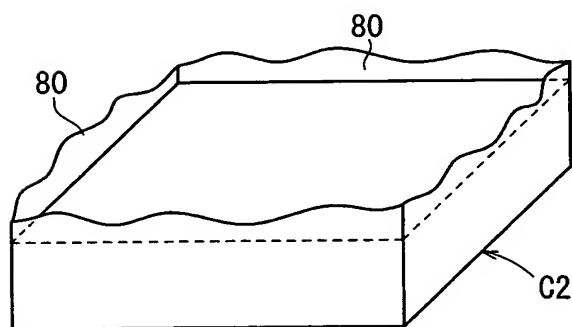


FIG. 7B



8/17

FIG. 8A

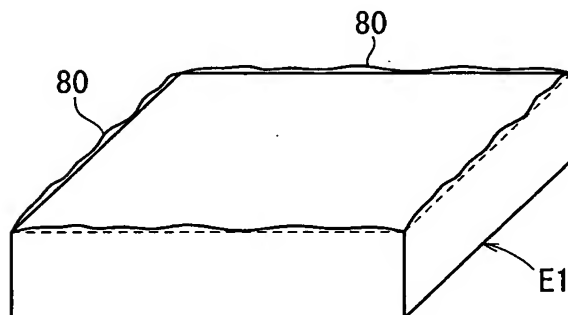
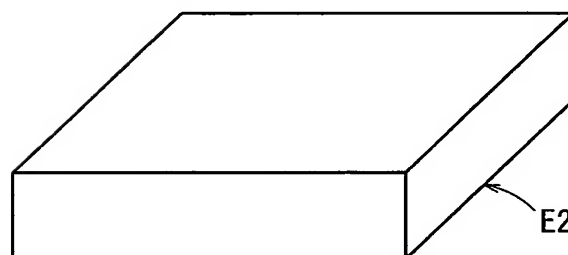


FIG. 8B



9/17

FIG. 9A

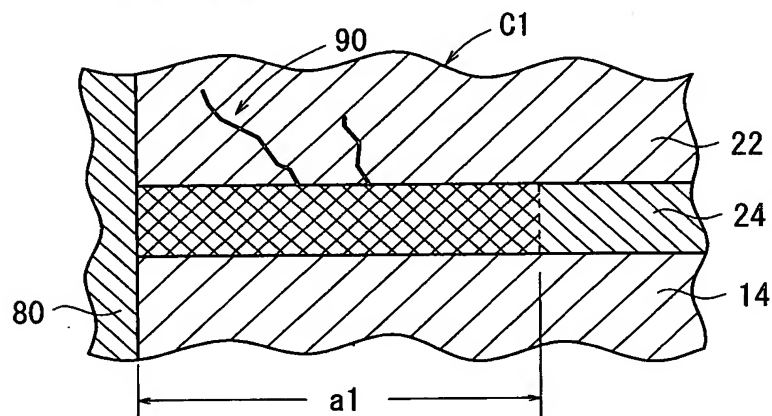
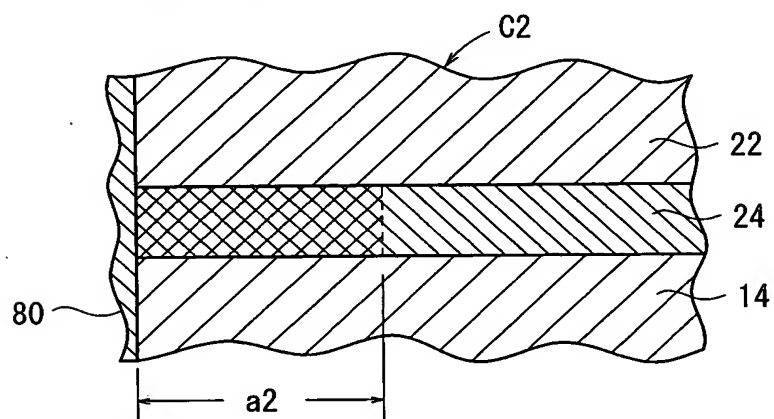


FIG. 9B



10/17

FIG. 10A

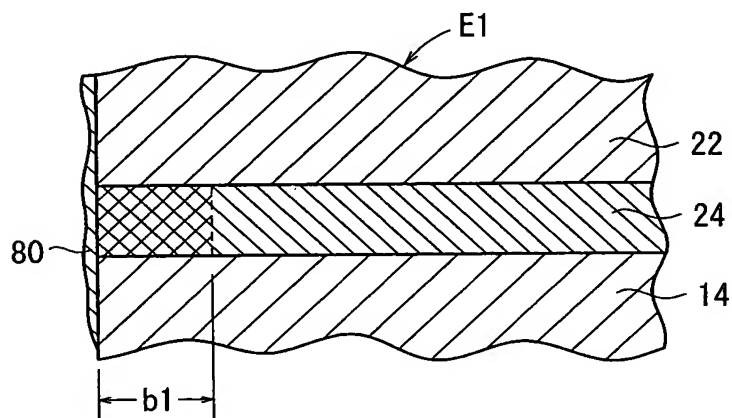
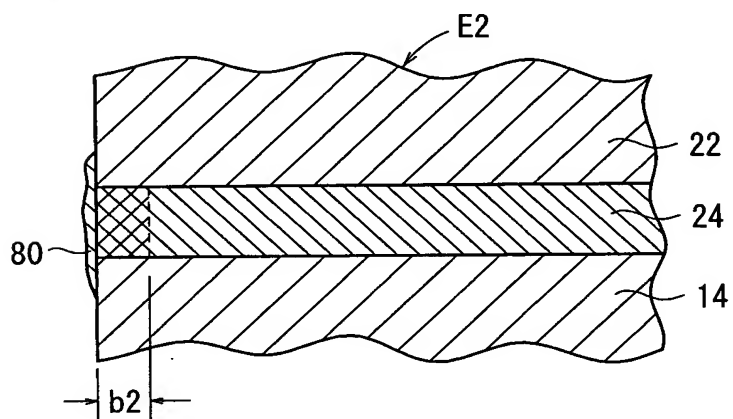
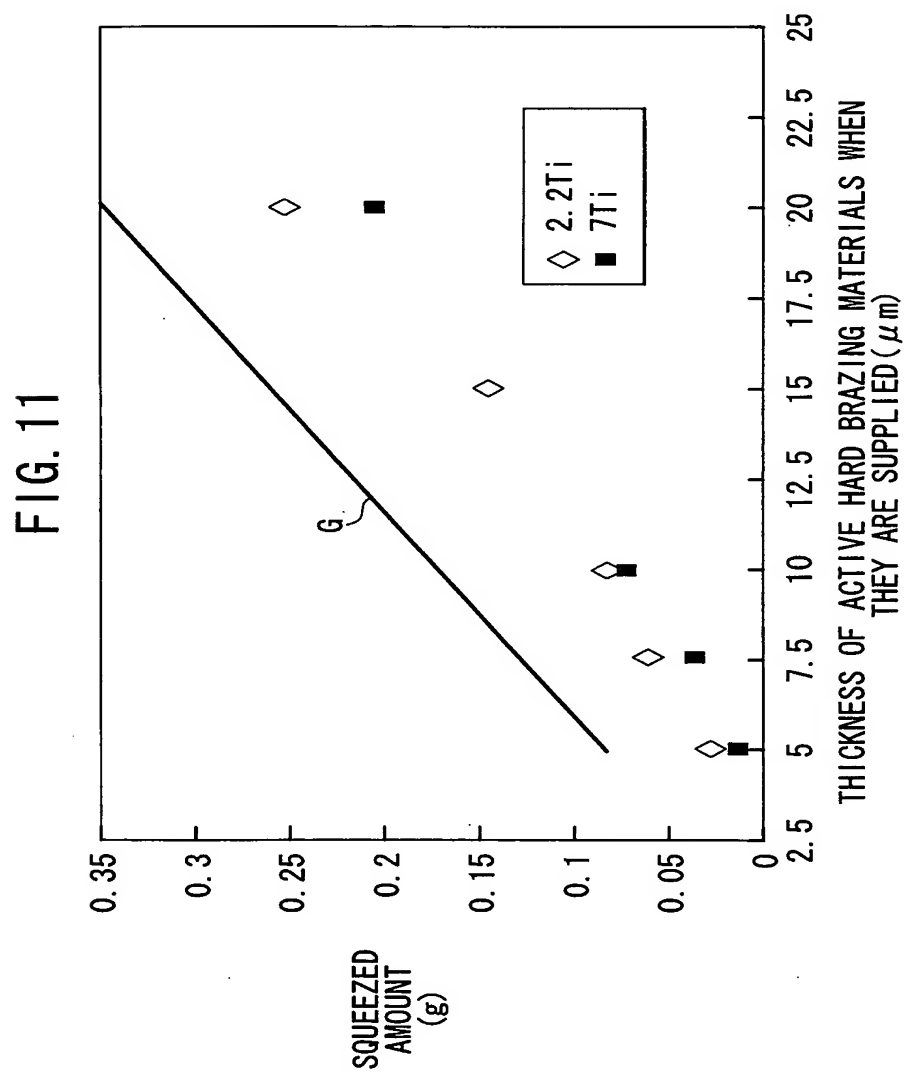


FIG. 10B

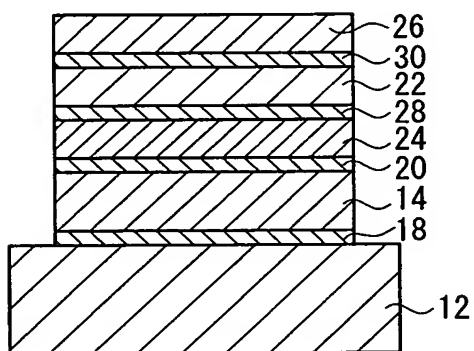


11/17

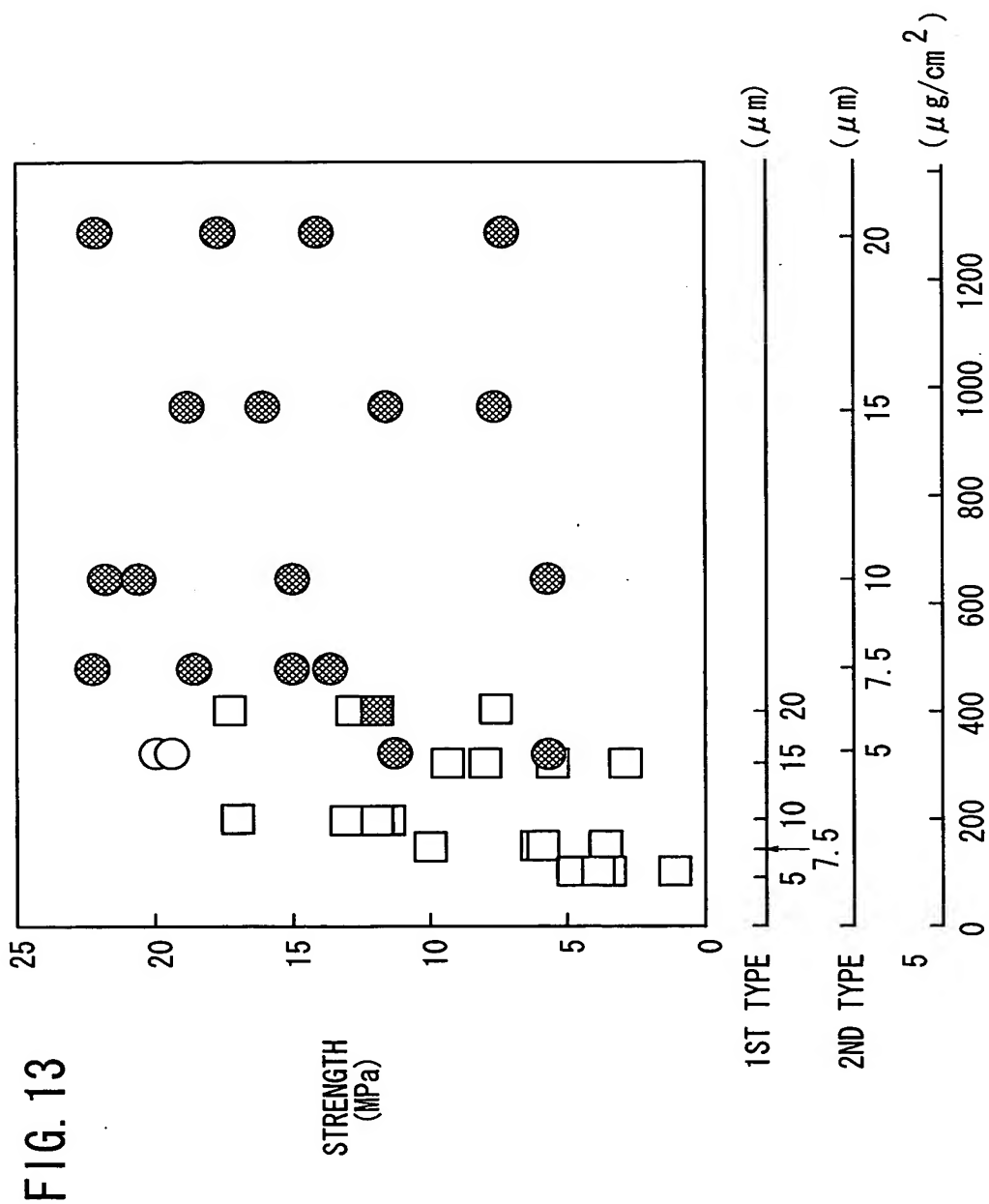


12/17

FIG. 12

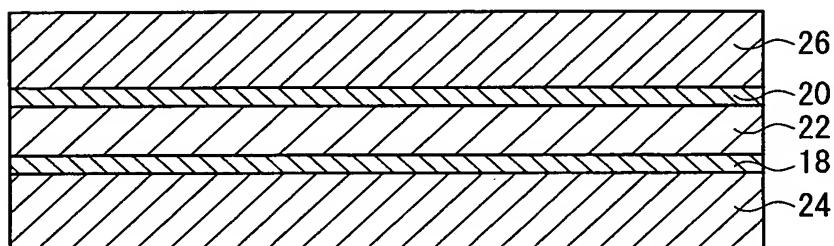


13/17



14/17

FIG. 14

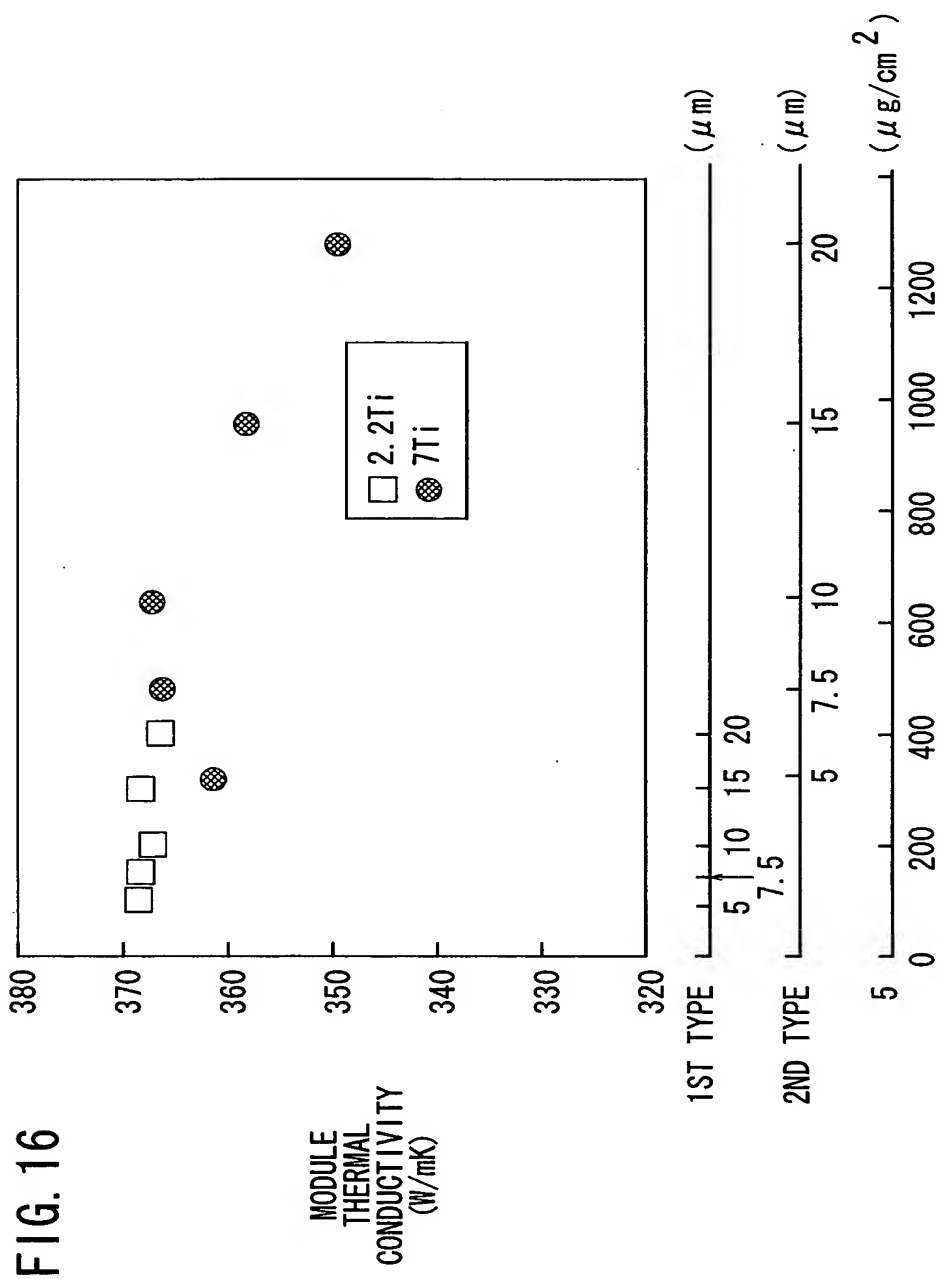


15/17

FIG. 15

SAMPLE	ACTIVE HARD BRAZING MATERIAL COMPOSITION	W1 (mg/cm ²)	W2 (μ g/cm ²)	JUDGED BONDING STRENGTH
1	60Ag-24.7Cu-14In-1.3Ti	2.91	37.83	NG
2	DITTO	4.85	63.05	OK
3	DITTO	7.28	94.64	OK
4	DITTO	9.7	126.1	OK
5	DITTO	19.4	252.2	OK
6	59.8Ag-24Cu-14In-2.2Ti	2.91	64.02	OK
7	DITTO	4.85	106.7	OK
8	DITTO	7.28	160.16	OK
9	DITTO	9.7	213.4	OK
10	DITTO	19.4	426.8	OK

16/17



17/17

FIG. 17

SAMPLE	ACTIVE HARD BRAZING MATERIAL COMPOSITION	W1 (mg/cm ²)	W2 (μg/cm ²)	JUDGED BONDING STRENGTH	λ _m (W/mK)	hm (mg)	JUDGED ALLOYING
1	60Ag-24.7Cu-14In-1.3Ti	9.7	126.1	NG	368	180	○
2	DITTO	19.4	252.2	NG	366	576	○
3	DITTO	29.1	378.3	NG	367	984	×
4	DITTO	48.5	630.5	OK	368	1440	×
5	59.8Ag-24Cu-14In-2.2Ti	4.85	106.7	NG	368	72	◎
6	DITTO	7.28	160.16	NG	368	144	◎
7	DITTO	9.7	213.4	NG	367	204	○
8	DITTO	14.55	320.1	OK	368	360	○
9	DITTO	19.4	426.8	OK	366	624	○
10	DITTO	29.1	640.2	OK	368	936	×
11	DITTO	48.5	1067	OK	355	1488	×
12	58.4Ag-23.5Cu-13.5In-4.5Ti	4.85	218.25	NG	368	48	◎
13	DITTO	7.28	327.6	OK	366	96	◎
14	DITTO	9.7	436.5	OK	367	192	○
15	DITTO	14.55	654.75	OK	366	360	○
16	DITTO	19.4	873	OK	350	552	○
17	DITTO	29.1	1309.5	OK	344	840	×
18	58Ag-22Cu-13In-7Ti	4.85	339.5	OK	361	36	◎
19	DITTO	7.28	509.6	OK	366	96	◎
20	DITTO	9.7	679	OK	367	168	○
21	DITTO	14.55	1018.5	OK	358	336	○
22	DITTO	19.4	1358	OK	349	504	○
23	DITTO	29.1	2037	OK	334	888	×